MEMORANDUM

TO: J. C. Craun

MEMO NO.: WMG-050

FROM: W. M. Gregg

FILE: B690-400/4973A

SUBJECT: Summary of My Testimony for On-Site Multi-Aquifer Wells Concerning Remedy

DATE: November 26, 1984

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ERT's recommendations for remedy of W23 and W105 was expressed in the April 1983 report. It was explained that sealing these wells up with cement-bentonite grout, from bottom to top, would be the most cost-effective action as part of the overall remedy needed to achieve the objectives of 1) a safe and adequate public water supply, and 2) protecting ground-water resources. In short, it would be less expensive to seal the wells now and deal later with any contaminants that may spread from the wells than to start pumping W23 now to control the spread of contaminants in and around the well.

At the time the report was written, W23 had been explored to a depth of about 866 feet, where a bailer lodged in the well prevented deeper exploration. The well was backfilled to a depth of 545 feet with bentonite, and an 88-foot section of ten-inch diameter casing and a 30-foot section of seven-inch casing had been removed. Since ERT completed its report the following work items have been completed at W23:

- the rest of the seven-inch casing (about 120 feet) has been removed,
- bentonite was added up to about the 500 level, and
- some geophysical logging and water sampling have been done.

None of the most recent activities at W23 have resulted in any information that would change the conclusions with regard to remedy that were expressed in the April 1983 report.

Also, since the writing of ERT's report, W105 has been explored to determine its historical role as a contaminant source, and to determine what remedial actions are appropriate. The well was found to be plugged with soils (clay, silt, sand and gravel) over its entire explored depth of 780 feet. Again, a lodged bailer prevented exploration to the well's original depth, which is unknown. Well W105 was geophysically logged, sampled, and backfilled with benonite in much the same manner as W23. Based on this work, and historical information that this well was "sealed" in 1933, ERT believes that W105 was never a major source of contamination to any aquifer and the well should be sealed with cement/bentonite grout from bottom to top.

The bailers that became lodged in wells W23 and W105 not only prevented deeper exploration of each well, but prevented water quality sampling in the Mount Simon-Hinckley aquifer. Therefore, it has still not been determined if this aquifer has been contaminated by either W23 or W105. The predicted travel time for ground water in the Mt. Simon-Hinckley aquifer from well W23 to the nearest municipal well (SLP 11) is from 40 to 90 years (ERT, 1981). Any contaminants from either W23 or W105 would be attenuated by retardation effects which would significantly delay their arrival at SLP 11 compared to ground-water flow. Therefore, the lack of water-quality information in the Mt. Simon-Hinckley aquifer in the vicinity of W23 and W105 does not change ERT's recommendation to seal both these wells.

The work plan for these two wells that the State is following includes activities such as removing old casings, air-jetting the well bore, and water-quality testing. ERT believes that none of these activities will have a significant impact on planning remedial actions for the wells (i.e., sealing with grout) or an impact on the current state of knowledge about the history of the wells relating to the overall contamination problem. Therefore, the only remaining activity that ERT believes is necessary at W23 and W105 is to seal these wells with grout.